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ABSTRACT

The measurement of a pupil's comprehension development from literal comprehension to evaluation focused on two questions: (1) How do we measure the various types of comprehension? and (2) How should we measure the various types of comprehension? Literal comprehension is presently measured by the recall or memory-type question. However, one should assess the reading matter, know the content and background of the discussant, and form interrelationships accordingly. The next level of comprehension, reorganization, has been overlooked but should be measured using the silent strategies of sequence, synopsis, or summary tasks. Inferential comprehension is measured by making predictions and trying to verify them. However, greater emphasis should be placed on a directed-reading-thinking activity in which predictions and verifications lead to further thinking. The highest level of comprehension, evaluation, is primarily measured by asking the student for a judgment without a logical justification for it. This latter point should be stressed. References are included. (CL)

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STRATEGIES OF MEASURING STUDENTS UNDERSTANDING OF WRITTEN MATERIALS

(A paper presented at the Fifteenth Annual Convention of the International Reading Association, Anaheim, California, Thursday, May 7, 2:15 - 3:15, 1970)

Reading texts and manuals use a variety of words to describe the products of pupils' understanding of written materials (even though such products are usually bundled up in a bag called "reading comprehension skills"). The taxonomic structure developed by Barrett (1967) appears to gather such behaviors into a useful ordering that permits us to discuss comprehension in a meaningful way.

Accepting for communication and heirarchial arrangement purposes --the five major types of comprehension as illustrated in the Barrett

RE002 915

we view the following ordering:

1.0 Literal Comprehension

2.0 Reorganization

3.0 Inferential Comprehension

4.0 Evaluation

5.0 Appreciation

Because as Barrett notes, "Appreciation involves all the previously cited cognitive dimensions of reading" and goes beyond this, we shall arbitrarily delete this dimension in order that we might clearly attack the more simplified cognitive concerns of literal, reorganization, inferential, and evaluative comprehension. In so doing, we must certainly acknowledge the extremely critical nature of the appreciative or affective dimension.

In thinking about the task of measuring pupils' comprehension development, the author's experiences have forced dichotomous questions that ask:

How do we measure the various types of comprehension?

How should we measure the various types of comprehension?

The tipoff is immediate that significant differences are perceived between the way we measure and the way in which we should measure. Hopefully, the extent and import of the dichotomy will become apparent as we discuss each major comprehension area as defined by Barrett.

Literal Comprehension

How Do We Measure It?

Literal comprehension is measured through the student's skill in recognizing some literal element while reading or recalling such an element after a selection has been read.

Typically, basal reader programs have inserted recognition type questions designed to guide the pupil's understanding of the most pertinent literal understandings in the various stories. Frequently referred to as the "guided reading strategy" this technique places the teacher in the role of the guide who asks the leading questions in advance of a page, story, etc. As the students respond to the task by searching out the element, the teacher has the opportunity to observe those who are succeeding as well as those who are not. Upon the completion of the search the teacher checks out via oral questioning her observations. The whole task goes something like this:

Teacher: Find the name of the story.

Child: The trip.

Teacher: O.K. Now read the first page and find out when the Parks were taking a trip and where they were going. (Silence as pupils read).

Child: On June 1st.

Teacher: Good, and where were they going?

Child: To the mountains.

The values of such strategies seem evident in that they seem capable of guiding pupils to the prime elements of the story, a skill

these pupils must subsequently employ in a variety of reading materials and tasks.

All values can be exploded if:

1. the questions don't direct the pupils to the most important elements, e.g., they are directed toward insignificant happenings.

2. the directing questions are inappropriate because they direct when such directional aid is superfluous.

3. a few pupils continuously provide all the answers (which is inevitable in almost any group).

Recall-type questions suffer from the same kinds of problems. Thus, teachers possess the dangerous possibility of programming children not only to look for insignificant information but also to remember insignificant facts that may be highlighted to the neglect of basic considerations.

How Should We Measure It?

Prior to any oral or written questioning of pupils it is essential to assess the particular reading content as to its:

1. most basic concepts.

2. sequence of events (and their relative importance).

Such assessment can indicate whether or not we should ask one question or many more, as well as the specific nature of the most pertinent questions. Nothing is more defeating than to squeeze a multitude of questions out of something of relatively little significance or meaning

to the readers or, conversely, to miss many basic points in a content of particular interest or importance. Thus, the first step to better assessment is to know the content, the backgrounds of the discussants, and the interrelationships of the two.

In oral questioning of the recognition-type it is reasonable to spot different tasks by saying:

John, please see why they were taking this trip.

Mary, find out where they were going and how long they were going to stay.

Sue, see if you can find things that tell how each of them feel about the trip.

Bob, I'm hoping that you can find out. . . . .

Because the rapidity of assignment completion will invariably throw a monkey wrench in many teacher-directed group tasks, it's useful to set purposes in advance on the board and ask the students to use a marker technique (such as a paper clip) to mark the specific elements as they find them in their reading. By so doing, the rapid readers can complete the assignment and go on to something else while the slowest readers have time to finish tasks. A variation of this allows the children to jot down the page, paragraph, and sentence number of certain elements.

For purposes of measuring recall, group response instruments such as a color wheel can permit the teacher to find out precisely

which students know the answers to specific fact questions. The color wheel is held by each child and the teacher asks a question which may be answered by one of three colors, e.g:

Teacher: The real winner of the game was Tom, Bill, or Joe. Show blue for Tom, red for Bill, and white for Joe.

Pupils: (The pupils manipulate the color and flash it on signal to the teacher who notes the responses).

Because written questions suffer from the same types of problems that oral questions suffer, the use of the cloze technique seems especially valuable as a measure of comprehension for any type of reading material. Cloze tests simply involve the restoration by the pupil of deleted words (usually every fifth or tenth word from a selection of 250 words of more is deleted). For a further discussion of this technique the reader is referred to articles by Bormuth (1967), Rankin (1970), and Ranking and Culhane (1969).

Reorganization

How Do We Measure It?

Research and observation by the author suggest that we don't measure reorganization skill often enough. In a study of the questions asked by certain second, fourth, and sixth grade teachers (Guszak, 1967), it was noted less than one per cent of the questions were of the reorganization type.

In all fairness to the teachers, we must suggest that it's difficult to measure reorganization skills via the oral techniques that

characterize reading group discussions. Such tasks take time and when a single student is asked to reorganize a story through a summary or synopsis, there is little left for the other group members to do other than to make some additions or corrections.

Silent strategies, such as the following seem productive of reorganization measurement:

Sequence Tasks. Students are given pictures, sentences, or paragraphs and are asked to order them by their occurrence in the story. Sequence sets can be constructed for various stories. Some are used in basal workbooks where students are asked to do such things as writing the numerical order of specific events.

Synopsis, Summary Tasks. When writing skills are developing to a reasonable degree, the pupils can go beyond the arrangement or ordering of pre-packaged tasks and do their own summarizations.

Reorganization can't be slighted on the excuse that it is unimportant. It is important. Included in the skill is direction toward economy whereby the student can produce precise (short and accurate) reorganizations essential to effective communication.

Inferential Comprehension

How Do We Measure It?

Before allowing the children to turn to the next page, the teacher asks, "Well, what do you think Jack's going to do?" Instantly the

response arrives that Jack is going to "swing from the rope." The logic supporting the use of inferential training is certainly sound because we can think and read more ably when we can accurately anticipate what's coming. By constantly anticipating and seeking verifications of our anticipations we can increase both the speed and accuracy of our reading.

Unfortunately though, most teacher-pupil exchanges of the sort suggested above do not tap inference but rather whether or not the students have:

-listened to another reading group encountering the same bit.

-flipped ahead to see the picture.

-read the next page.

Consequently, much of the envisioned value just doesn't come off. Nor will it come off unless we rigidly hold every child to the same reading selection and page-turning pace.

How Should We Measure It?

Stauffer (1969) essentially dedicates a text to the means for stimulating thinking about reading, with the keystone being inferential thinking. Called the D-R-T-A, or Directed-Reading-Thinking-Activity, Stauffer describes how teachers can guide pupils to plug in their inferential skills to the smallest of clues, beginning with the title of a story, or a picture, etc. After the various pupils

make their inferences, all proceed to test (by reading) the various predictions. Upon verification, the students further predict and set about further verification, etc. This strategy which continues in this cyclic manner is quite different from the illustration at the beginning of this section because the Stauffer technique fosters genuine inference by various pupils as well as legitimate opportunities for verification.

Essential to carrying out some of D-R-T-A strategy as suggested by Stauffer are the following conditions:

-The availability of multiple sets of readers that won't always be previewed for the slower readers via the fastest readers who read them first (multiple adoptions will allow for this)

-The choice by the teacher or group leader of a significant organizer for inference, e.g., a suggestive title or clue.

-The sampling of a wide variety of conjectures so as to increase the investment of all concerned (in the group).

-The accurate verification of the most precise conjecture.

Pupils will learn to sense when to apply convergent conjectures or divergent conjectures. At times, they will realize that they totally missed the significant cues that might guide their anticipations. Still, the exercise will refine the processes of anticipation that are capable of making us either strong or weak anticipators-"er," readers, that is. Good readers are good guessers!

Evaluation

How Do We Measure It?

Have you ever heard or used any of these questions?

-Well, how did you like that story (ending, character, etc.)?

-Would you like to be in a situation like that?

-What kind of boy do you think Bill was?

-Which story did you like best in this unit?

If you have heard or used such, you've surely heard the droning "yeses" and"noes" as well as the various and sundry "goods," "bads," and other judgement terms.

There's nothing wrong in asking for evaluations if we ask for the supports of the evaluations. All too often, according to the author's research, we fail to plug in the "why" followup question and ask:

-Why did (or did not) you like the story?

-Why would (or would not) you like to be in a situation like that?

-Why do you think Bill was that kind of boy(whatever kind was indicated)?

-Why did you like that story best?

Perhaps you've gotten the message. If so, when someone asks you about this session and you tell them, be sure to tell them "<u>why</u>" it was "good" - "bad" - or "indifferent."

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